液醇 : 前路計算

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Page 290, upper left column, line 10 to upper right column, line 17

In the present constitution, the via holes are formed in the first and second layer insulating films 10, 2 at extremely smaller intervals than the above mentioned frequency wavelength λ and the via holes in the first layer and the via holes in the second layer are connected with each other through the conductive film 11. Further, in the present example, the via holes are formed also in the substrate and the via holes 3 in the first layer insulating film are connected with the via holes 3 in the substrate so as to be connected to the ground electrode 12 on the reverse face of the substrate, so that all the via holes 3 and the conductive film 11 are grounded at high frequency.

In general, there is a process limitation in forming a via hole so as to be thin and deep and it is impossible to form a via hole in a thick insulating film. For solving this problem, the insulating films having thickness to an extent that a via hole can be formed stably under the process limitation are layered, the via holes are formed in each layer, and the via holes in the layers are connected with each other through the conductive films 11, thereby obtaining a grounding conductive wall of microwaves equivalent to that shown in FIG. 1. Accordingly, the present embodiment is useful especially in the case where the insulating films formed on the semiconductor substrate 1 are thick. In addition, as shown in FIG. 5, which is a section taken along the line V-V in FIG. 4, when the arrangement of the via holes are altered by displacing each of the via holes in the second layer insulating film 10, the first layer insulting film 2, and the substrate 1 from one another, roughness of the metal films which is generated at the upper and lower parts of the via holes in via hole formation does not influence the via holes in the upper and lower layers, attaining stable in process and easy formation of the via holes.